

IRC1004

INDOOR PEOPLE COUNTER

The IRISYS IRC1004 is a novel thermal array based people counter family applicable to a wide variety of counting applications:

- Retail, Shopping Malls & Shops
- Leisure, Hotels & Casinos
- Transportation
- Smart Buildings
- Museum & Gallery

The key benefits include:

- Minimal set up
- User-Definable Count Lines
- Bus Connectivity up to 30 units
- Wide Opening Capability up to 8 units IRC1004 People Counter

Description of the IRC1004

The IRC1004 is a people counting device with the imaging optics, sensor, signal processing and interfacing electronics all contained within a moulded plastic housing. The unit is used in a downward looking manner, with an unhindered view of the target area. The unit functions optically, seeing the heat emitted by people passing underneath as infrared radiation. The sensing area is a square on the floor whose width is approximately equal to the mounting height; at 3.5m the unit 'sees' a 3.25x3.25m square on the floor. Mounting heights ranging from 2.5 to 4.5m can be covered with the standard lens (60°), and a 40° field of view lens, offering increased mounting heights, is available as a factory fitted option, up to 7m high. The units may be used as single counters, linked into networks of up to 30 individual units or configured to span a wide opening. In the wide opening mode up to 8 units are linked to span the wide opening and will appear to the user as a single counter unit with a wide 'footprint'.

Two types of output are provided which allow connectivity to the majority of user systems. The simplest data output is by relay; there are two relays within the unit that are software configurable to provide count data from the system. The relays allow stand-alone systems to be implemented by connecting the relays to a simple digital counter, for example. A data bus output is also provided; this is based on the CAN protocol (Controller Area Network) which is a two-wire, high-performance multi-drop bus standard with high noise immunity and the ability to drive over many hundreds of metres. An IWC2020 module is available to convert this to familiar RS232 protocol.

Set-up is carried out by connecting to a laptop PC; this allows the scene to be visualised and the counting lines to be configured uniquely to the requirements of the scene, as described overleaf.

The Product Family

- Standard Counter-Relay outputs IRC1004/0
- Standard Counter-Data bus output IRC1004/1
- Master Counter-Relay outputs IRC1004/2
- Master Counter-Data bus output IRC1004/3



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SPECIFICATION

COVERAGE PATTERN

The mounting height determines the maximum coverage area available, as shown below.

Mounting Height Options	Mounting Height Range (m)	Width of Field of View (m)
60° Field of View IRC1004	2.5 - 4.5	2.25 - 4.25
40° Field of View IRC1014	4.0 - 7.0	2.4 - 4.4

COUNT LINES

There are two count lines, to allow counting in both directions, which may be user- configured in a number of ways:

1. Preset



There are 8 preset line positions (above) which appear in the scene as shown in Fig. 1.

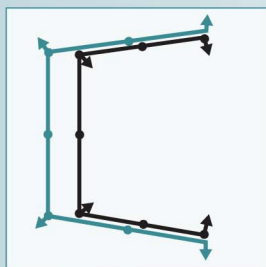


Fig. 1. Preset Lines

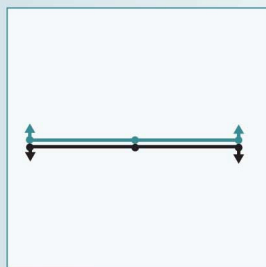


Fig. 2. User Configured Lines

2. User Configurable

The count lines may be user configured by drag and drop movement. Both line position and shape may be user configured. Fig. 2 shows a user configured line combination.

3. Count Direction

The count increments when a target crosses the line, and exits the scene. The direction of line crossing which increments the count is user selectable, and is shown by the 'direction arrows' on the lines in Figs. 1 & 2 above.

4. Count Line Placement Restrictions

The user is free to place and adjust the count line, with two important restrictions: the line shape must not be closed, and a certain initialisation space must be allowed between the edge of the scene and the count line. This is usually required to be three pixels, or 3/16 x the width of the scene on the floor.

TECHNOLOGY

16x16 element pyroelectric array; with temperature sensitivity <2.0K, detection speed range 0.5-3ms-1.

COUNTER SYSTEM IMPLEMENTATIONS

Single counter; for counting at single entry/exit point.

- Network; up to 30 counters may be networked together; for counting data from multiple locations.
- Wide opening; up to 8 counters may be linked to span a wide opening that is wider than the field of view of a single counter.

CONFIGURATION

Configuration of the counter to be carried out at the time of installation:

- A front connecting RS232 interface module (IWC2044) can be used to connect to an RS 232 port on a PC.
- A permanent RS232 connection can be made using the IWC2023 back connecting interface module if required
- Configuration software is freely available.

COMMUNICATION

Communication with the counter:

To existing end user data collection system either by relay . data-bus serial interface.

To attached PC running IRISYS Data Collection & Analysis . software (specification available, PC count or user created software).

POWER SUPPLY REQUIREMENTS

Supply voltage: 10-28VDC Ripple: 2Vpk-pk within the supply voltage range Typical Supply Current: 70mA at 12V, 45mA at 24V.

MECHANICAL

Housing: White ABS

Dimensions: 111mm diameter x 50mm deep.

Weight: ≤ 0.2kg

Mounting: Two fixing holes in base.

The front part of the unit is removable from the base by a twist and pull, bayonet style action.

ENVIRONMENT

The counters are intended for use in indoor environments, free from rapid changes in temperature or humidity. For more severe environments the IRC 1003 should be used. Operating temperature: 0°C to +40°C (Non-condensing) Storage temperature: -10°C to +50°C

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